

## CLAIMS

What is claimed is:

- 1        1.        A system for predicting semiconductor product costs at a fabricator  
2        comprising:  
3                a storage medium including a database of historical critical dimensions  
4        and historical critical groundrules correlated to cost functions at said fabricator;  
5                a user interface having user inputs for new design parameters and new  
6        critical groundrules associated with a new device to be produced at said  
7        fabricator; and  
8                a computer adapted to receive said user inputs, extract data from said  
9        storage medium perform a regression analysis on said data, and compute  
10       semiconductor costs for said new device.
- 1        2.        The system in claim 1, wherein said historical critical dimensions and said  
2        new critical dimensions comprise gate dimensions.
- 1        3.        The system in claim 1, wherein said new critical dimensions are smaller  
2        than said historical critical dimensions.
- 1        4.        The system in claim 1, wherein said new device comprises a future

1 technology generation.

2 5. The system in claim 4, wherein fabrication hardware and fabrication  
3 methods for producing said future technology generation are unknown.

1 6. The system in claim 1, wherein said relationships comprise base models  
2 and models that include options.

1 7. The system in claim 1, wherein said relationship comprise models that  
2 illustrate that costs increase exponentially as said historical critical dimensions  
3 and said historical critical groundrules are reduced.

1 8. A method of predicting semiconductor product costs comprising:  
2 performing a regression analysis on historical costs of historical critical  
3 dimensions at a fabricator, using said historical critical dimensions as independent  
4 variables and said historical costs as dependent variables;

5 creating, in a database, models from said regression analysis showing a  
6 relationship between said historical critical dimensions and said historical costs;  
7 and

8 inputting new design parameters and new critical dimensions of a new  
9 device into said database and predicting product costs of said new device based on  
10 said models.

1 9. The method in claim 8, wherein said historical critical dimensions and said  
2 new critical dimensions comprise gate dimensions.

1 10. The method in claim 8, wherein said new critical dimensions are smaller  
2 than said historical critical dimensions.

1 11. The method in claim 8, wherein said new device comprises a future  
2 technology generation.

1 12. The method in claim 11, wherein fabrication hardware and fabrication  
2 methods for producing said future technology generation are unknown.

1 13. The method in claim 8, wherein said models include base models and  
2 models that include options.

1 14. The method in claim 8, wherein said models illustrate that costs increase  
2 exponentially as said historical critical dimensions and said historical groundrules  
3 are reduced.

1 15. A system for predicting semiconductor product costs at a fabricator  
2 comprising:

3 a regression analyzer adapted to determine relationships between historical  
4 critical dimensions of historical technologies and costs of said historical  
5 technologies;  
6 a user interface for inputting a new critical dimension of a new technology;  
7 and  
8 a calculator for predicting a cost of said new technology based on said new  
9 critical dimension and said relationships.

1 16. The system in claim 15, wherein said historical critical dimensions and  
2 said new critical dimensions comprise gate dimensions.

1 17. The system in claim 15, wherein said new critical dimensions are smaller  
2 than said historical critical dimensions.

1 18. The system in claim 15, further comprising a storage unit adapted to store  
2 a database of said relationships.

1 19. The system in claim 15, wherein said new device comprises a future  
2 technology generation.

1 20. The method in claim 19, wherein fabrication hardware and fabrication  
2 methods for producing said future technology generation are unknown.

1 21. A program storage device readable by machine, tangibly embodying a  
2 program of instructions executable by said machine for performing a method of  
3 predicting semiconductor product costs, said method comprising:  
4 performing a regression analysis on historical costs of historical critical  
5 dimensions at a fabricator, using said historical critical dimensions as  
6 independent variables and said historical costs as dependent variables;  
7 creating, in a database, models from said regression analysis showing a  
8 relationship between said historical critical dimensions and said historical costs;  
9 and  
10 inputting new design parameters and new critical dimensions of a new  
11 device into said database and predicting product costs of said new device based on  
12 said models.

1 22. The storage device in claim 21, wherein said historical critical dimensions  
2 and said new critical dimensions comprise gate dimensions.

1 23. The storage device in claim 21, wherein said new critical dimensions are  
2 smaller than said historical critical dimensions.

1 24. The storage device in claim 21, wherein said new device comprises a  
2 future technology generation.

1 25. The storage device in claim 24, wherein fabrication hardware and  
2 fabrication computer program products for producing said future technology  
3 generation are unknown.

1 26. The storage device in claim 21, wherein said models include base models  
2 and models that include options.

1 27. The storage device in claim 21, wherein said models illustrate that costs  
2 increase exponentially as said historical critical dimensions and said historical  
3 groundrules are reduced.